SMART BLINKERS SPEED HUMPS USING SOLAR PANEL

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SUPERVISOR'S DECLARATION

I hereby declare that I have checked this thesis and in my opinion, this thesis is adequate in terms of scope and quality for the award of the Degree of Engineering Technology in (Infrastructure Management) with Honors.

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(Supervisor's Signature)

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Date :

STUDENT'S DECLARATION

I hereby declare that the work in this thesis is based on my original work except for quotations and citations, which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at Universiti Malaysia Pahang or any other institutions.

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ABSTRAK

Sebuah kenderaan memandu laju boleh menjadi menaced kepada pengguna jalan raya yang lain terutamanya di jalan-jalan di mana interaksi antara trafik bermotor dan tidak bermotor adalah tinggi, seperti jalan-jalan kediaman, zon sekolah dan kawasan komuniti. Walaupun tanda-tanda had laju ditempatkan mengikut kehendak piawaian, banyak yang ditinggalkan oleh hati nurani pemandu sama ada mereka harus mematuhinya. Oleh itu, mengawal kelajuan kenderaan adalah isu kritikal dalam pengurusan lalu lintas. Kaedah mengurangkan kelajuan fizikal seperti bonggol kelajuan sering digunakan sebagai salah satu langkah. Pemasangan bonggol kelajuan pada pendekatan sekitar persimpangan akan mengurangkan kelajuan, menenangkan trafik dan akhirnya memberikan keadaan lintasan yang lebih selamat bagi semua pengguna. Sejak bonggol kelajuan dipasang di persimpangan pintu masuk utama ke UMP Kampus Gambag,kebanyakan pemandu tidak kelihatan pada waktu malam, kajian ini berhasrat untuk dilengkapi bonggol kelajuan dengan meletakan lampu iaitu smart blinkers yang akan menjadi solar sebagai sumber tenaga. Ujian perintis menggunakan bonggol kelajuan dengan pengedip pada waktu malam menunjukkan bahawa kelajuan kenderaan dikurangkan berbanding dengan senario tanpa pengedip.

ABSTRACT

A speeding vehicle can be a menaced to other road users particularly on roads where interaction between motorized and non-motorized traffic is high, such as residential streets, school zones and community areas. Although speed limit signs are placed in accordance with the requirements of the standards, much is left to the conscience of the drivers whether they should abide by them. Hence, controlling vehicular speeds is a critical issue in traffic management. Physical speed reducing method such as speed hump is often used as one of the measures. Installation of speed humps at approaches to a junction will reduce speed, calm traffic and eventually provide safer crossing condition for all users. Since speed humps installed at junction of main entrance to UMP Gambang Campus are hardly visible at night, this study intends to equipped the speed humps with blinkers that will be solar powered. Pilot test using the speed humps with blinkers at nights indicated that vehicle speeds were reduced as compare to the scenario without the blinkers.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Speed humps are one tools available in the traffic calming toolbox, and have gained acceptance by authorities (domestic and international). However, design and application varies widely between jurisdictions, and speed humps often meet resistance from residents and road users. (Parkhill, Eng, Sooklall, Sc, & Bahar, 2007)

In 1997, according to the Institute of Transportation (ITE), the design of speed humps must be based on the standards recommended and lessons learned through experiences.

The occurrence of two fatal accidents in the vicinity of UMP Gambang Campus main entrance road with the Federal Road 222 (road to LPT Gambang Toll Plaza) had forced the authorities to installed a series of speed humps from both approaches of FR 222. The presence of the speed humps has been effective to reduce vehicle speed, calm traffic and provide safer crossing environment for all road users.

1.2 Problem Statement

Although traffic and warning signages are installed adequately on both approaches, they are hardly visible at nights and instead of slowing down traffic, had posted as obstacle and becoming less effective. Effort should be conceded to increase the visibility of the speed humps at night through installation of blinkers.

1.3 Objectives

The main objective for conducting this project is to enhance the stability of the speed humps using smart blinkers possibly power by solar.

1.4 Scope of Study

The smart blinkers for the speed humps will be installed at the following site plan.

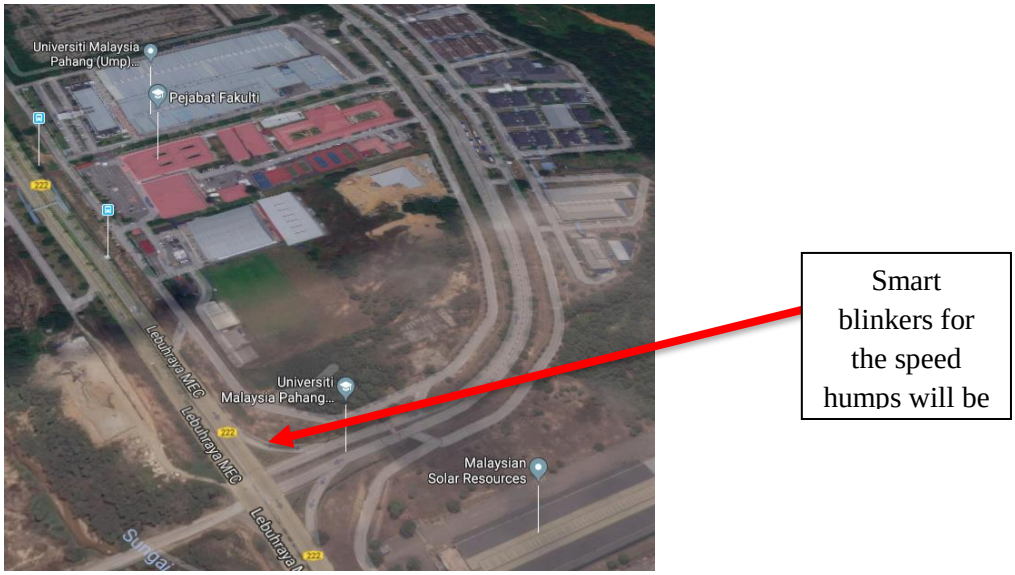

Figure 1-1: Site Plan

1.5 Significant of study

The study is conducted to generate the vest and most suitable speed humps so-called smart blinker by using electrical system which can be seen by the driver easily hence slowing down their speed.

1.6 Expected Outcome

By the end of this project, the smart blinkers speed humps used solar panel system, will be install both side of Federal Road 222 using prototype when the:

- Using the battery and smart blinkers to easy the drivers see at speed humps
- Make the experiment used solar panel to generate power based on the pilot test

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